

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Protective Coating of Dyestuff Powders

We, CECIL EDWIN HENRY BAWN, of the University, Bristol, and ERNEST GORDON COCKBAIN, of Hexagon House, Blackley, Manchester, both British Subjects, and
5 IMPERIAL CHEMICAL INDUSTRIES LIMITED, of Imperial Chemical House, Millbank, London, S.W.1, a Company incorporated under the laws of Great Britain, do hereby declare the nature of this
10 invention to be as follows:—

The present invention relates to the protective coating of dyestuff powders whereby the particles thereof are provided with a film of oily or waxy substance.

15 The dyestuff powders referred to are of dyestuffs other than hygroscopic salts, and wholly or partly soluble in water. Typical powders are those of commercially produced basic dyestuffs such as
20 Rhodamine B and Auramine O. The invention however is not restricted to the treatment of such basic dyestuffs, it is applicable to any dyestuff powder of the kind described of which the nature is such
25 that when manipulated its contact with the human skin may cause dermatitis or persistent staining, or have other objectionable effects.

Moreover from the treated powders of
30 the present invention pellets and tablets may be easily made by compression, and the so-obtained pellets and tablets do not readily generate noxious dust in further handling.

35 According to the invention a powder of the kind described is admixed with an oily or waxy substance consisting of or containing a spreading oil. The operation is carried out at a temperature at
40 which the oily or waxy substance is completely liquefied.

For the production of pellets or tablets according to the invention the so-obtained material is compressed in a suitable mould
45 by known methods.

It will be understood that the powder need not consist wholly of material soluble in water; it may itself be a mixture of water-soluble and water-insoluble
50 material. For instance a coloured powder may contain a proportion of such azo colouring matters as are used for colouring fats and waxes.

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As oily or waxy substance consisting of or containing a spreading oil we have
55 found the following classes of material to be suitable: (i) aliphatic carboxylic acids the molecules of which contain from 8 to 18 carbon atoms; (ii) aliphatic alcohols the molecules of which contain from 8 to
60 18 carbon atoms; (iii) oxidised mineral oils; (iv) triglycerides of aliphatic carboxylic acids containing from 8 to 18 carbon atoms; (v) the liquid mixtures of higher molecular weight obtained by
65 boiling linseed oils; (vi) wool-fat or the derived alcohols, acids, etc.; (vii) mixtures of the substances classified under (i) to (vi) with mineral oil, petroleum jelly, or paraffin wax.
70

The invention is illustrated but not limited by the following examples, in which the parts are by weight:—

EXAMPLE 1

100 parts of Auramine O (Colour Index
75 No. 655) are stirred with a mixture of 1 part of oleic acid and 4 parts of paraffin wax (M.Pt.50—52°C.) at 60°C. for 30 minutes. Heating is then stopped and the mixture is allowed to cool to room
80 temperature, with stirring. The treated powder so obtained has a slightly greasy feel and is less dusty than the untreated powder. The powder is easily pressed into pellet form in a pelleting machine.
85 The pressed pellets have a distinctly greasy feel and are much less dusty than pellets made from the untreated powder.

EXAMPLE 2

100 parts of Rhodamine B (Colour
90 Index No. 749) are stirred with a mixture of 1 part of oxidised spindle oil prepared by passing air through grade 35 mineral lubricating oil at 200°C. until the spreading pressure of the oil on water exceeds 20
95 dynes per cm. and 6 parts of paraffin wax (M.Pt.50—52°C.) at 60°C. for 30 minutes. Heating is then stopped and the mixture is allowed to cool to room temperature, with stirring. The treated powder so
100 obtained has a greasy feel and is less dusty than the untreated powder. The powder is easily pressed into pellet form in a pelleting machine. The pressed pellets

have a greasy feel and are much less dusty than pellets made from the untreated powder.

Dated the 9th day of December, 1942.

J. W. RIDSDALE,
Solicitor for the Applicants.

COMPLETE SPECIFICATION

Protective Coating of Dyestuff Powders

We, CECIL EDWIN HENRY BAWN, of the University, Bristol, and ERNEST GORDON COCKBAIN, of Hexagon House, Blackley, Manchester, both British Subjects, and IMPERIAL CHEMICAL INDUSTRIES LIMITED, of Imperial Chemical House, Millbank, London, S.W.1, a Company incorporated under the laws of Great Britain, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to the protective coating of dyestuff powders whereby the particles thereof are provided with a film of oily or waxy substance.

The dyestuff powders referred to are of dyestuffs other than hygroscopic salts, and wholly or partly soluble in water. Typical powders are those of commercially produced basic dyestuffs such as Rhodamine B and Auramine O. The invention however is not restricted to the treatment of such basic dyestuffs, it is applicable to any dyestuff powder of the kind described of which the nature is such that when manipulated its contact with the human skin may cause dermatitis or persistent staining, or have other objectionable effects.

Moreover from the treated powders of the present invention pellets and tablets may be easily made by compression, and the so-obtained pellets and tablets do not readily generate noxious dust in further handling.

According to the invention a powder of the kind described is admixed with not more than one-tenth of its weight of an oily or waxy substance as further defined below. The operation is carried out at a temperature at which the oily or waxy substance is completely liquefied. At these temperatures the substances spread over the surface of the powder particles.

For the production of pellets or tablets according to the invention the so-obtained material is compressed in a suitable mould by known methods.

It will be understood that the initial dyestuff powder need not consist wholly of dyestuff soluble in water; it may itself be a mixture of water-soluble and water-insoluble colouring matters. For instance a coloured powder may contain a propor-

tion of such water-insoluble azo colouring matters as are used for colouring fats and waxes.

The oily or waxy substances used in the invention are: (i) aliphatic carboxylic acids the molecules of which contain from 8 to 18 carbon atoms; (ii) aliphatic alcohols the molecules of which contain from 8 to 18 carbon atoms; (iii) oxidised mineral oils; (iv) triglycerides of aliphatic carboxylic acids containing from 8 to 18 carbon atoms; (v) the liquid mixtures obtained by boiling linseed oils; (vi) wool-fat or the derived alcohols, and acids; (vii) mixtures of the substances classified under (i) to (vi) with mineral oil, petroleum jelly, or paraffin wax.

The invention is illustrated but not limited by the following examples, in which the parts are by weight:—

EXAMPLE 1

100 parts of Auramine O (Colour Index No. 655) are stirred with a mixture of 1 part of oleic acid and 4 parts of paraffin wax (M.Pt. 50—52°C.) at 60°C. for 30 minutes. Heating is then stopped and the mixture is allowed to cool to room temperature, with stirring. The treated powder so obtained has a slightly greasy feel and is less dusty than the untreated powder. The powder is easily pressed into pellet form in a pelleting machine. The pressed pellets have a distinctly greasy feel and are much less dusty than pellets made from the untreated powder.

EXAMPLE 2

100 parts of Rhodamine B (Colour Index No. 749) are stirred with a mixture of 1 part of oxidised spindle oil prepared by passing air through grade 35 mineral lubricating oil at 200°C. until the spreading pressure of the oil on water exceeds 20 dynes per cm. and 6 parts of paraffin wax (M.Pt. 50—52°C.) at 60°C. for 30 minutes. Heating is then stopped and the mixture is allowed to cool to room temperature, with stirring. The treated powder so obtained has a greasy feel and is less dusty than the untreated powder. The powder is easily pressed into pellet form in a pelleting machine. The pressed pellets have a greasy feel and are much less dusty than pellets made from the untreated powder.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. Process for the protective coating of powders of dyestuffs other than hygroscopic salts and consisting wholly or partly of water-soluble dyestuff, which comprises mixing them with not more than one-tenth of their weight of an oily or waxy substance as hereinbefore defined, the mixing being effected at a temperature at which the oily or waxy substance is completely liquefied.

2. Process as claimed in Claim 1, according to which the powder consists of a commercially produced basic dyestuff such as Rhodamine B or Auramine O.

3. Process as claimed in Claim 1, substantially as described in the Examples.

4. Coated dyestuff powders whenever obtained by the process claimed in any of Claims 1 to 3.

5. Process for the production of pellets and tablets, which comprises compressing the coated dyestuff powders claimed in Claim 4 in a suitable mould.

6. Process for the production of pellets and tablets containing dyestuffs substantially as described in the Examples.

7. Pellets and tablets containing dyestuffs whenever obtained by the process claimed in Claims 5 or 6.

Dated the 8th day of December, 1943.

J. W. RIDSDALE,
Solicitor for the Applicants.

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